

## ABSTRACT OF THE DISCLOSURE

A fuel injection amount control apparatus estimates an intake air amount for a present or coming suction stroke of a cylinder based on an estimated throttle opening, and calculates a pre-correction estimated necessary fuel amount based on the intake air amount. The apparatus also calculates an actual intake air amount based on an actual throttle opening at the end of the previous suction stroke, and calculates an actual necessary fuel amount based on the actual intake air amount. The apparatus then calculates an actual intake fuel amount based on an actual fuel injection amount for the previous suction stroke and a forward fuel behavior model, calculates a normal estimated necessary fuel amount by correcting the pre-correction necessary fuel amount according to a difference between the actual necessary fuel amount and the actual intake fuel amount, and calculates a fuel injection amount for this suction stroke, based on a reverse fuel behavior model, so as to induct fuel of the normal estimated necessary fuel amount into the cylinder.